

Embodying education - a bildung theoretical approach to movement integration

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ABSTRACT

Movement integration (MI) has become a significant part of contemporary educational policy; it implies that teachers of any school subject are responsible for organizing movement activities that are of educative value. In this paper, we use Wolfgang Klafki's Bildung theoretical analysis to examine contemporary approaches to MI and clarify dominant theoretical and didactic ways of working with MI. We aim to suggest a new understanding of MI by applying Klafki's conception of categorial Bildung. We argue that it enables educators to emphasize the educative and existential potential of the embodied, social and emotional involvement with the academic content. Our analyses illustrates the thorough didactic consideration needed to transform an educational policy into real-world education.

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Introduction

Physical activity (PA) has become a significant pedagogical focus over the last decade (Bangsbo et al., 2016; Singh et al., 2018). Researchers have paved the way for PA in schools by arguing for its benefits in terms of health (Hallal et al., 2012), wellbeing (Biddle & Asare, 2011) and cognitive functions (Donnelly et al., 2016). This research has encouraged policymakers to integrate PA into school policy, making it part of an international tendency towards a whole-day school approach (Naylor et al., 2015). Consequently, the government of Denmark passed a new reform for Danish public schools in 2014 that made 45 minutes of PA a mandatory part of every pupil's school day.

One way to increase PA in education is movement integration (MI), which 'involves infusing physical activity, at any level of intensity, within general education classrooms during normal classroom time' (Webster, Vazou, & Goh, 2015, p. 691). It implies that teachers in any subject are responsible for transforming the broad concept of MI into concrete teaching activities. Thus, an essential didactic task for teachers is to connect movement and academic content. MI is a dominant approach to integrating PA into Danish public schools and researchers (Jørgensen & Troelsen, 2017; Seelen, 2017) have identified three general didactic approaches that Danish teachers apply: (1) movement separated from academic content, (2) movement combined with academic content and (3) movement integrated into academic content. These three didactic approaches reflect different ways that teachers govern MI as

educational policy and point to different educative concepts of MI.

The transformation of educational policy and research knowledge into real-world education is a significant challenge, and teachers are struggling to integrate MI into their teaching (Jørgensen & Troelsen, 2017; Routen, Johnston, Glazebrook, & Sherar, 2018). This struggle reflects some issues inherent in the very concept of MI. The primary arguments for MI in education are rooted in the scientific fields of health, psychology and behavioural neuroscience and have subsequently been transposed into the pedagogical realm and educative practice, which is a challenging endeavour. Therefore, we argue that more careful didactic analysis is required for MI to have genuinely educative value.

In this paper, we draw on Wolfgang Klafki's (1994) Bildung theoretical analyses to examine how teachers can integrate MI in a didactically coherent way. Klafki's analyses can help clarify the several theoretical and didactic ways of approaching and working with MI. We use Klafki's Bildung theory because it offers a coherent account of the relation between educational philosophy and didactics. A relation that is important to establish to apply MI. Klafki's statement that Bildung theory shapes didactics is central to our argument; without theory, teaching would be an incoherent affair of isolated actions (1994, p. 252). The normative perspective of Bildung points forward, so the theory can establish patterns and models that open new didactic insights and possibilities (Wiberg, 2016).

What is *Bildung* theory?

Bildung is a philosophical concept that concerns ideas and values about human existence and development. The concept of *Bildung* originates in the German tradition and ideas related to Enlightenment. One central element of *Bildung* concerns a qualification for autonomy and the Kantian aim to enable the use of one's reason. Historically, *Bildung* theory has been a matter of formulating normative ideas about the value and the aim of teaching (Wiberg, 2016); it has been fundamental to developments in educational philosophy. Drawing on classical *Bildung* theories, Klafki argues for a general *Bildung* (*Allgemeinbildung*) that implies that *Bildung* should be a) *Bildung* for all, b) *Bildung* that concerns general and universal issues and c) *Bildung* of all human dimensions and faculties. Thus conceived, *Bildung* is an emancipatory movement that should aim to develop self-determination, co-determination and solidarity (Klafki, 1994, p. 52). To develop these capacities, Klafki stresses that all realms of human life must be involved, specifying six dimensions of general *Bildung*: (1) a joyful and responsible approach to the body, (2) cognitive abilities, (3) practical abilities, (4) sociality and intersubjective abilities, (5) the aesthetic competence to observe and create and (6) ethical and political vigour (1994, p. 54). The integration of movement into education can, in various ways, promote and support each of these dimensions. However, the dominant agenda in contemporary educational research and policy concerning MI has focused on cognitive and intersubjective abilities. Therefore, we pursue below the potentials of embodied actions concerning all the varied dimensions of general *Bildung*.

Analysis

Against this background, the analysis targets different approaches to MI structured by Klafki's three overall *Bildung* categories: formal, material and categorial. Klafki developed an extensive didactical analysis that informs our examination, although it is beyond our aim to detail the complexity of Klafki's (1994) analysis in its entirety. First, we describe and analyse how material and formal *Bildung* theories affect didactics and the pedagogical practice of MI, using concrete pedagogical actions as examples. Second, we introduce the concept of categorial *Bildung* and elaborate on how it can establish a new approach to MI. We outline the pedagogical implications with a focus on embodied actions, which is inspired by the work of Martin Wagenschein and Jerome S. Bruner.

Our analysis is guided by the following didactic questions: (1) What are the implications of MI for pupils' future lives? (2) How is learning interpreted? (3) What is the relation between academic content, the pupil and MI as a methodology? These questions

are informed by elements that Klafki emphasized in the didactic process (1994). He underlined the importance of recognizing the significance that teaching has for pupils and reflects upon how it affects their future lives. This concern points to Klafki's concept of learning, which involves pupils' reflecting on what they have learned and why. Finally, Klafki emphasizes that the development of a teaching methodology should be rooted in the distinctiveness of the academic content and the pupils with an overall emancipatory aim (p.262).

Material *Bildung* – the absence of movement in education

Klafki analysed existing *Bildung* theories and divided them into two groups: material and formal (1983, p. 38). Material *Bildung* focuses on the content of teaching, in which the didactic consideration is about choosing content matter that will contribute to *Bildung*. For Klafki, material *Bildung* has two primary forms, with two different criteria. The first is *objectivity* and is based on science, with *Bildung* resulting from acquiring the appropriate scientific knowledge. For this process to take place, pupils have to open up and indulge the content, regardless of their personal preferences, and thus acquire the knowledge regarded as objective in a given cultural area. The second criterion is *classical* and emphasizes content that in some way and in a given cultural area sets an example that calls for imitation. Classical content reflects the values and ideals of a community; when pupils have sufficiently integrated this content, they have the right *Bildung*.

Material *Bildung* has several critical pedagogical implications. The primacy of content means that less attention is paid to the pupils' learning processes and didactic reflections upon teaching methods. The prioritization of content can generate pressure on the curriculum concerning the amount of content; Klafki argues that the consequence is a teaching style often based on lecturing (1983, p. 41). Accommodating an expanding curriculum is therefore a vital didactic task and entails different principles and strategies of choosing and limiting academic content that makes up the pupils' *Bildung*; who chooses that content and how is essential and has historically been a didactic battleground (Klafki, 1983, 1994). However, according to Klafki, little attention has historically been directed towards the power structures of selecting academic content. Factors such as social class and gender have been overlooked, with Klafki arguing that the didactical process must take such political dimensions into account (1994, p. 48).

As for MI, knowledge of physiology, anatomy, health and body culture are all possible elements that correspond to the criteria of material *Bildung*. However, the very idea of MI contradicts the

lecturing practice informed by material Bildung; in fact, it can be interpreted as a response to the excessive use of this form of pedagogical practice. MI is a pedagogical practice shaped by actions that aim to enhance physical activities and promote a healthy, active lifestyle. When employed to enhance academic performance, MI appears to be a part of the formal Bildung process.

Formal bildung – optimizing learning through physical fitness

Formal Bildung is characterized by focusing on the pupil in the *process* of Bildung. Fundamentally, formal Bildung aims to build up pupils' physical, intellectual and cognitive abilities, which they can then transfer to a variety of situations and fields of knowledge (Klafki, 1983, p. 46). The essential issue in formal Bildung is to identify the pedagogical practices that can most efficiently develop transferable abilities.

At the Copenhagen Consensus Conference (2016), researchers outlined how MI can contribute to pupils' transferable abilities: 'A single session of moderate physical activity has an acute benefit to brain function, cognition and scholastic performance in children and youth' (Bangsbo et al., 2016). The consensus was based on research into the effect of PA and MI focusing on cognitive functions to enhance academic performance (Donnelly et al., 2016; Hillman et al., 2009; Pesce, Crova, Cereatti, Casella, & Bellucio, 2009). The researchers also stated that 'engagement in physical activity has the potential to positively influence psychological and social outcomes for children and youth, such as self-esteem and relationships with peers, parents, and coaches' (Bangsbo et al., 2016). The aim of MI, as outlined at the Copenhagen Consensus Conference, is to stimulate cognitive, psychological and social capacities that are transferable to any educational matter. The result is improved academic performance, and MI thus contributes to formal Bildung by developing abilities that are beneficial for educational goals. Researchers have investigated different pedagogical practices to find those that most effectively enhance the required abilities.

Mullender-Wijnsma et al. (2015) illustrate the approach in an intervention study examining second- and third-grade pupils. The main goal of their study was improving academic outcomes, with secondary goals of increases in executive functioning, physical fitness and physical activity. Physical activities like marching, jogging and hopping were integrated into classrooms and combined with academic work. The researchers measured significantly higher academic performance in the intervention group than in the control group (Mullender-Wijnsma et al., 2015). The pedagogical implications of formal Bildung are physical activities such as marching and jumping, which are disconnected

from the usual educative practice in schools. It results in a didactic approach to MI that separates movement from the academic content.

Klafki argues that formal Bildung is inadequate for several reasons, of which we focus on two. First, to perceive thinking as a trainable cognitive ability is to reduce the complexity of the mind (1983, p. 47). The concept of cognition in formal Bildung does not involve pupils' reflection upon what they learn and why. Second, the idea of a method disconnected from academic content is problematic. Klafki holds that the distinctiveness of the academic content should guide the teaching methodology. For example, the method in a maths class depends on the mathematical task and differs from the method used in a music class (Klafki, 1983, p. 52).

Thus, researchers and policymakers who argue for MI as a way to make education more efficient by focusing on cognitive functions within the brain are examples of a kind of formal Bildung. The result is an infusion of activities in education to which the body must contribute to ensure the right physiological circumstances, with movement intensity, frequency and duration as essential didactic considerations. As we have demonstrated in our analysis, MI can be interpreted as a response to material Bildung, whereas the dominant approach to MI contributes to the process of formal Bildung, because it aims to develop transferable cognitive, physiological and social abilities. However, according to Klafki, this theory has an inherent problem; it tends to sever the relation between the academic content, the pupil and an adequate methodology. In Klafki's view, these are three elements that should constitute a coherent didactic unity. Therefore, drawing on Klafki's theory of categorial Bildung, we argue below for a reconsideration of the didactical approaches to MI in a way that restores the tripolar structure to the didactics of MI.

Categorial bildung – embodying education

We have argued above that MI is predominantly part of formal Bildung's focus on learning abilities. However, education has potentials and elements well beyond that scope. Teaching can create a milieu in which pupils experience different realms of the world and can acquire insight into, and recognition of, their existence. According to Gert Biesta (2017), education provides a place where interaction with otherness is essential to educative experiences:

"To exist as a subject, as I will suggest, means being in a "state of dialogue" with what and who is the other; it means being exposed to what and who is other, being addressed by who and what is other, being taught by who and what is other, and pondering what this means for our existence and for the desires we have about our existence. (p. 4)

Biesta's statement reflects the ideas of German philosopher Wilhelm von Humboldt, who emphasized that the dialectic meeting between the subject and the real world was a prerequisite for *Bildung* (Wiberg, 2016). This idea inspired Klafki, who argues that *Bildung* is a dialectic process in which pupils open up to the object of teaching, and where the object opens itself to the pupils (1983, p. 61).

The theories of material and formal *Bildung* travel different but parallel routes in the history of teaching. Klafki developed his theory of categorial *Bildung* as an alternative to both, in order to overcome inadequate truths and the contradiction between object-related and subject-related theories. Klafki's aim is, however, not to provide a synthesis of material and formal *Bildung*. Rather, categorial *Bildung* is an attempt to put them into a dialectical relation with each other. The critical-emancipatory aim of *Bildung* is thus realized in pupils' interaction with academic content. In this way, categorial *Bildung* provides an alternative to material and formal *Bildung*, which has pedagogical and didactic implications for the practice of MI in schools.

An implication is the selection of the academic content based on its significance for the pupils' lives. Klafki argued that learning through examples of categorial character is fruitful for the *Bildung* process. Categorial examples must have a living connection to pupils' lives and must be transferable to their horizon of experiences and problems. Wagenschein (2015) has argued for the qualities of the exemplary approach, which is an alternative to traditional teaching, based on gradual sequences. He stresses that the aim is to choose an example that reflects a general academic theme, which enables a reduction of academic topics to be taught, focusing instead on acquiring a deeper understanding of few selected themes. The process of *Bildung* emerges when teaching exceeds the subject and opens pupils to a fundamental understanding of themselves and their positions in the world (Wagenschein, 2015, p. 48). A case becomes attractive and educative when the pupil wishes to understand it (*ibid.*, p. 113). Wagenschein exposes how exemplary teaching in history classes is not a matter of pondering but of venturing into situations, of forcing pupils to act. In this context, they can experience essential and unexpected insights; understanding history, for example, is attained by acknowledging one's actions and capabilities (*ibid.*, p. 51). For Klafki, the criteria for selecting examples should be based on a continuing discussion of the abilities and insights that pupils need to develop to sustain democratic conditions in society both today and in the future. The use of examples in teaching is a time-consuming process and calls for a careful selection of a limited number of examples in the curriculum. By unfolding

the common in a specific example, Klafki argues that pupils acquire insights into the complexity of the topic and develop previously inaccessible strategies to solve problems (1994, p. 144).

Another implication of the categorial *Bildung* is the approach to learning process. According to Klafki, the acquisition of categorial insight occurs at the pupils' confrontation and dialogue with the 'other.' For *Bildung* to take place, it is essential that the acquisition of knowledge and problem solving concerning the object involve pupil self-employment and immersion in the object. Concerning this enactive dimension, Klafki's theory draws on Jerome S. Bruner's ideas, especially his explorative and problem-based learning strategy, in which teaching encourages pupils to be open and try out possibilities (1994, p. 157). Bruner (2006) identifies different levels of the representation of knowledge. The first is the 'enactive level,' where learning occurs through exploration and trying out opportunities in the real world through the body, social relations and direct linguistic communication. The second or 'iconic level' is where images, narratives, schemes and games illustrate the living world. At the third or 'symbolic level,' abstract concepts, reflections and theoretical arguments outline the dimensions of real life. While these steps appear to move gradually to higher abstraction, the learning process must be based on the enactive level, which is the starting point for the iconic and symbolic levels (Bruner, 2006, p. 69).

This insight is instructive when it comes to MI. Informed by this account of categorial *Bildung*, MI implies a pedagogical practice where embodied actions and academic content merge into an embodied pedagogy. Here, engagement with the content affects the pupils' perceptions of their positions in the world. An example illustrates the relevance of this pedagogical approach. Imagine an eighth-grade history class in which the pupils are to study the escape of Danish Jews to Sweden during the Second World War. The teacher sets the scene by telling the pupils that the Nazis have occupied Denmark and by October 1943 have decided to intern all Jews in concentration camps. The resistance decides to help the Jews flee to Sweden. However, it is difficult to make contact and plan their escape. Each pupil takes on a secret identity – Jew, resistance, snitch or Nazi. The Jews and the resistance receive notes with a password that helps them find the right person. In the hallway, the pupils circle one another and explore who is who, trying to make the right contact. The aim is for the Jews to identify the resistance without being revealed. A moment of suspense is followed by two pupils who take each other by the hand and run, with other pupils trying to catch them before they reach the imagined shores of Sweden.

For today's pupils, the persecution and flight of Jews in 1943 is initially an abstract phenomenon. However, distance in life situations and historical time can be overcome and made meaningful by re-enacting historical events. The bodily, social and affective involvement in that activity opens the content for the pupils and enables them to recognize the inherent uncertainty and different power structures in the historical event. According to Wagenschein, pupils venture into a historical situation that forces them to act. The pupils are *doing* history, and this has the potential to awaken the pupils' curiosity and reflection, which in turn opens the way to iconic and symbolic representations. The enactive confrontation with the Jews' escape can create a connection between the academic content and the pupils themselves, as they perceive and reflect upon escape and anxiety in a specific historical and cultural context. The educative experience has an existential dimension that transcends the written curriculum and opens the way for pupils to understand a significant epochal problem in a world of conflicts, where children and adults today do not flee across the sea to Sweden, but instead flee from other wars and persecution in many parts of the world. Thus, the encounter with the example from the Second World War entails a deeper understanding of helping – and persecuting – human beings in general. The meeting with the other, as Biesta argues, is a dialogue that offers the pupils a new perspective on the world and may enhance solidarity. It is a time-consuming process, and the enactive undertaking cannot be a stand-alone activity; ideally, it should be carefully implemented as part of a more extensive educative practice. But the central point we want to make is that categorial Bildung can be a valuable way of emphasizing pupils' involvement with academic content that could contribute to new ways of integrating movement into pedagogical practice.

Discussion

In light of our examination, we discuss the didactic implications for MI and the possibilities and limitations of the different Bildung theories. This discussion is structured by the analytical questions, and we emphasize the didactic consequences of the Bildung theories, including how they shape embodied actions and how MI can affect the future lives of pupils. Finally, we discuss how MI framed by categorial Bildung is related to the burgeoning fields of embodied and enactive cognition.

Didactic implications

An ever-changing and increasingly complex world challenges education. The expanding curriculum

and changes in modus towards the digitization of knowledge are exerting pressure throughout today's educational system. Researchers and policymakers respond by seeking new strategies to make education more efficient. MI is such a pedagogical strategy, and studies have shown how MI can be utilized as a method of developing transferable abilities that enhance academic performance. As illustrated by the small physical fix that streamlines cognitive brain functions and enables pupils to learn more effectively, education can accommodate the pressure. However, the question is whether pupils engage with the issue and feel the urge to understand and reflect upon the academic content with which they are presented. This may be the case, but it does not arise because of physical fitness like marching, jogging and hopping. Klafki underscores the importance of pupils' reflecting on the academic encounter, which contrasts with an MI shaped by formal Bildung. We think the approach misses out on the vital potentials of embodied actions. Categorial Bildung can inform another kind of MI. Through examples of educative value, pupils encounter the world, which opens new ways of recognition, as the example from the eighth-grade history class illustrates. The pupils' embodied actions open new perspectives on the historical event. Wagenschein emphasizes that it is a time-consuming approach because embodied actions and reflections are part of pedagogical practice and take time to settle in. Thus, the MI shaped by categorial Bildung stands in contrast to the course set out by policymakers and researchers.

The double-sided opening

The idea that fitness can enhance cognitive function may be correct; however, it raises some educational issues. First, as Klafki points out, it is academic content and pupil that together shape an adequate methodology. Without a coherent methodology, MI is in danger of becoming a method in which movement is separated from academic content and disconnected from the educational practice in schools. Second, a narrow focus on learning and cognitive function can make education a solitary process. According to Klafki (1994, p. 257), good teaching is a social process, and cognition is embedded in the pupils' intersubjective and affective constitutions. Material Bildung emphasizes content at the expense of the pupils learning process, whereas formal Bildung tends to overemphasize the cognitive process. Both Bildung theories fail to achieve the didactic unity of academic content, pupil and an adequate methodology. Categorial Bildung is an alternative that can contribute to rethinking the didactic unity of MI dialectically. It addresses the issues by emphasizing that pupils

encounter one another, the world and its content. When pupils experience the world, it awakens their intellectual curiosity and desire to understand it. The result is a double-sided opening, where the pupil engages with the content, and the content opens the pupil's mind. Consequently, embodied actions become part of the teaching methodology and are inherently related to didactic considerations of the academic content, the pupils and their interactions with one another and the community.

Formal, material and categorial *Bildung* represent fundamentally different philosophies of education. Formal *Bildung* holds the dominant position in contemporary education, which Biesta (2017) holds has led to the primacy of learning at the expense of teaching. Due to the influence of policymakers, the educational sector is obliged to find efficient and cost-effective strategies that maximize learning (Hattie, 2012). However, the approach has started a discussion on contemporary education, which revolves around the contradiction between an efficiency approach and a more normative approach (Knudsen, 2017). Fundamentally, the contradiction is about whether the educational practice should be informed by evidence that supports strategies to maximize learning outcomes or it should be informed by theoretical ideas and values that support the formation of pupils. The integration of MI in education is an educational policy affected by the two positions. MI shaped by formal *Bildung* is related to the efficiency approach and has led to a pedagogical practice that aims to enhance cognitive functions. We believe that MI is a vital pedagogical practice that can contribute to the formation of pupils. Therefore, we argue for the importance of a thorough discussion of *Bildung* theoretical perspectives in any account of MI. Thus, we draw on arguments from a normative approach. Categorial *Bildung* can contribute to rethinking and reforming an alternative approach to MI. According to Klafki, *Bildung* has to attend to different realms of human life, and we have argued that bodily and enactive teaching methods can contribute to this end. The example from the history class illustrates how pupils can develop ethical and political vigour. As an alternative embodied action, the pupils could act and perform the historical event and thus develop the aesthetic competence needed to observe and create. While categorial *Bildung* takes time to be effective, it is feasible because schools represent a unique setting in society that can provide a space for embodied actions, reflections and personal growth.

MI and embodied education

Klafki draws on Bruner's representational theory, which is a part of the tradition of cognitivism (Gallagher, 2017). However, by emphasizing the enactive level, Bruner points to the importance of

embodied actions. The embodiment is vital in another approach in cognitive science, which unfolds in the theory of embodied cognition (EC) and enactivism. The concept of cognition is substantially different, but it may inform and inspire MI as part of the categorial *Bildung* process. According to EC and enactivism, cognition is not merely a brain event but emerges from processes distributed across the brain-body-environment relationship (Di Paolo, Rohde, & De Jaegher, 2010; Gallagher, 2017; Noë, 2004; Rowlands, 2010). The enactive approach rethinks the process of cognition and expands the concept to the enactive level by emphasizing how cognitive processes are influenced by embodied action (Di Paolo et al., 2010; Noë, 2004), intersubjectivity (De Jaegher & Di Paolo, 2007; Fuchs & De Jaegher, 2009) and affective aspects (Colombetti, 2007). These three elements of enactivist approaches can contribute to – and elaborate on – the pedagogical impact of the enactive level.

The enactive approach involves sensorimotor input along with social and affective dimensions, whereas MI shaped by formal *Bildung* is a matter of cardiovascular aerobics and motor skills that enhance brain functions. Gallagher explains the contrast: 'The experiencing agent is intentionally engaged with the world through action and projects that are not reducible to pure mental states but involves intentionality that is motoric and bodily' (2017, p. 78). The enactive experiences involve multi-faceted dimensions that can catalyse pupils' reflections upon what they have learned and why. As argued above, we take this to be a promising approach, and it is encouraging to see that an enactive approach is gradually developing into educative concepts that integrate bodily experiences and interactions (Hutto, Kirchhoff, & Abrahamson, 2015; Kondrup Kristensen & Otrell-Cass, 2017; Shapiro & Stolz, 2018). However, we acknowledge that further studies into ways of applying this approach in schools are required.

Conclusion

What pupils encounter in education and how they encounter it are both significant because they shape pupils' present and future lives. Policymakers and researchers try to affect the direction of education and develop pedagogical strategies that contribute to the process of pupil formation. Insights from *Bildung* theory can help analyse differences and reveal possibilities and challenges. Our examination, based on Klafki's *Bildung* theoretical analyses, has revealed different approaches to MI. Material *Bildung* focuses on comprehending knowledge based on lecturing, with MI as a response to inactive pedagogical practice. The dominant approach to MI focuses on developing transferable abilities that contribute to formal *Bildung*, with the result being a pedagogical practice in which movement is separated from academic

content. Our suggestion for an alternative draws on Klafki's account of categorial Bildung, which expands the focus by emphasizing the educative and existential potential of integrating movement and academic content. MI informed by categorial Bildung can contribute to forming a pedagogical practice that involves exemplary learning and teaching that can lead to a doubled-sided opening on both the pupil and content sides of the pedagogical equation. This theory informs an enactive approach to the didactical work of teachers, where pupils' bodily actions and academic content merge, affecting pupils' perceptions of their positions in the world. We recommend further pedagogical and didactic studies to develop properly situated and embodied actions that contribute to the categorial Bildung process.

Disclosure statement

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